

Fw: Cumulative Exposure Calculations

Bob Benson to: brattin

01/07/2013 09:00 AM

From: Bob Benson/R8/USEPA/US

To: brattin@srcinc.com

Please review the approach that Krista used.

Are you in the building today? If so, call me when the US Mag meeting is finished.

----- Forwarded by Bob Benson/R8/USEPA/US on 01/07/2013 08:58 AM -----

From: Krista Christensen/DC/USEPA/US

To: Bob Benson/R8/USEPA/US@EPA,

Cc: brattin@srcinc.com, David Berry/R8/USEPA/US@EPA, Leonid Kopylev/DC/USEPA/US@EPA, Thomas Bateson/DC/USEPA/US@EPA

Date: 01/07/2013 08:59 AM

Subject: Re: Fw: Cumulative Exposure Calculations

Hi Bob-

Thank you for the information; that's helpful. I don't have an excel file to recreate what I did in SAS, but try to show my logic below (the SAS file can be opened in notepad to see the full text). Note that I took my "season" definitions from appendix F of the ERD.

I'll be in a meeting for the next hour, but feel free to call afterward or email if what I wrote is not clear...thanks!
Krista

0) merge the files with 'selected' data for n=434 and the detailed exposure information by year and season, by subject ID

1) assign the year and season when the x-ray was taken

```
xray_year=year(x_ray);  
  if month(x_ray) in(1,2,3,4,5) then xray_season=1; * spring (Jan - May) ;  
  else if month(x_ray) in(6,7,8) then xray_season=2; * summer (June - August)  
;  
  else if month(x_ray) in(9,10,11,12) then xray_season=3; * fall (Sept - Dec)  
;
```

2) delete exposure which occurred AFTER the x-ray was taken (based on year and season)

```
if year>xray_year then delete;  
if year=xray_year and season>xray_season then delete; run;
```

3) sum up exposure across all years and seasons

4) for the different lags: delete exposures that occurred in the X years prior to x-ray (based on year and season), then sum up exposure across remaining years and seasons

```
%do i=5 %to 20 %by 5;  
  if year<(xray_year-&i) or (year=(xray_year-&i) and season<=xray_season);
```

Bob Benson---01/07/2013 10:45:09 AM---It is my understanding that the cumulative exposure data (unlagged and

lagged) were calculated using

From: Bob Benson/R8/USEPA/US
To: Krista Christensen/DC/USEPA/US@EPA
Cc: brattin@srcinc.com, David Berry/R8/USEPA/US@EPA, Leonid Kopylev/DC/USEPA/US@EPA,
Thomas Bateson/DC/USEPA/US@EPA
Date: 01/07/2013 10:45 AM
Subject: Re: Fw: Cumulative Exposure Calculations

It is my understanding that the cumulative exposure data (unlagged and lagged) were calculated using the seasonal data. We don't have day-level data.

The SAS file is not helpful because I don't have SAS and cannot open the file. Can you provide an Excel file of your calculations?

Krista Christensen---01/07/2013 08:35:26 AM---Hi Bob- I was looking over the new exposure estimates you sent a couple weeks ago, and thought I'd t

From: Krista Christensen/DC/USEPA/US
To: Bob Benson/R8/USEPA/US@EPA, brattin@srcinc.com, David Berry/R8/USEPA/US@EPA,
Cc: Thomas Bateson/DC/USEPA/US@EPA, Leonid Kopylev/DC/USEPA/US@EPA
Date: 01/07/2013 08:35 AM
Subject: Fw: Cumulative Exposure Calculations

Hi Bob-

I was looking over the new exposure estimates you sent a couple weeks ago, and thought I'd try to recreate the cum and lagged cum exposure values from the season-level data, to ensure I understood how they were calculated. The unlagged cum exp estimates from my calculations identical to those in the excel file you sent for subjects with xray in 2000's, but slightly different for those with xray in 1980 (which leads me to think it's not a rounding issue). The lagged cum exp estimates are slightly different across the board.

Were the estimates in the excel file generated using day-level data (or other), or based solely on the season/year-level data? I think the difference is likely due to how the lags are taken, but not quite sure where the discrepancy would lie. I've attached my SAS program in case that is helpful.

[attachment "NewExposure_26Dec2012.sas" deleted by Bob Benson/R8/USEPA/US]

Thanks!
Krista

Bob Benson---12/26/2012 12:40:18 PM---Attached are spreadsheet that have the data for cumulative exposure based on GM and AM approaches.

From: Bob Benson/R8/USEPA/US
To: Thomas Bateson/DC/USEPA/US@EPA, Krista Christensen/DC/USEPA/US@EPA, Leonid
Kopylev/DC/USEPA/US@EPA
Cc: brattin@srcinc.com, David Berry/R8/USEPA/US@EPA
Date: 12/26/2012 12:40 PM
Subject: Cumulative Exposure Calculations

Attached are spreadsheet that have the data for cumulative exposure based on GM and AM approaches. The calculations are all based on the 899 IH data (duplicates for 1977 for Track Unload were removed, but the GM JEM prepared originally by UC did not change) and the corrected seasonal adjustment factors.

Here is the original spread sheet from UC with the data by season and year for the 513 workers. One tab is based on GM, the other tab is based on AM.

[attachment "Worker exposure by season 12-20-2012.xlsx" deleted by Krista Christensen/DC/USEPA/US]

Bill prepared the two spreadsheet below. The data were narrowed to 434 workers based on the selection criteria described in the tab. The files show cumulative exposure for each of the 434 workers with lags of 0, 5, 10, 15, and 20 years. One file is based on GM, the other is based on AM.

[attachment "GM Data for Fitting NCEA Copy.xlsx" deleted by Krista Christensen/DC/USEPA/US]

[attachment "AM Data for Fitting NCEA Copy.xlsx" deleted by Krista Christensen/DC/USEPA/US]

I am in the office today. I will be out Dec 27, Dec 28 and will return Jan 2. Call me (303-312-7070) or Bill (home, 303-697-6593) if you have questions about the data sets.